L13 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:714509 CAPLUS <<LOGINID::20080708>>
TITLE: Effects of β- cyclodextrin on solubilization of lutein
AUTHOR(S): Yang, Yunshang; Zhang, Haixia; Zhang, Yingpeng; Shen, Tao; Chen, Xuefu
CORPORATE SOURCE: College of Petrochemical Technology, Lanzhou University of Technology, Lanzhou, Gansu Province, 730050, Peop. Rep. China
SOURCE: Shipin Gongye Keji (2007), 28(5), 195-196
CODEN: SGOKE6; ISSN: 1002-0306
PUBLISHER: Shipin Gongye Keji Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of β- cyclodextrin (β- CD) on solubilization of lutein were investigated. The solubility of lutein was linearly increased with the increase of β- CD concentration The complex constant Kf for β- CD and lutein was 3.63*103 L/mol.

L13 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:192510 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 148:222068
TITLE: Microcapsules with shells of improved impermeability, comprising amino acid, protein, saccharide and/or wax
INVENTOR(S): Yulai, Jin; Barrow, Colin James; Zhang, Wei; Yan, Cuie; Curtis, Jonathan Michael; Moulton, Shawn; Djogbenou, Nancy Beatrice; Webber, Lesek Alexa
PATENT ASSIGNEE(S): Ocean Nutrition Canada Ltd., Can.
SOURCE: PCT Int. Appl., 117pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008017962	A2	20080214	WO 2007-IB3358	20070604
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

PRIORITY APPLN. INFO.: US 2006-837050P P 20060811
US 2006-811024P P 20061105
US 2007-879759P P 20070110

AB Disclosed are microcapsules and methods for preparing and using them, as well as methods for improving various properties of microcapsules like impermeability. Thus omega-3 microcapsule powder for co-delivery of zinc and fish oil was prepared: the omega-3 microcapsule powder used had an average 180.5 mg/g powder of DHA+EPA and 210.9 mg/g powder of total omega-3 acids. In order to deliver zinc at 100 mg per 500 mg EPA+DHA of powder, ZnCl2 (75.24 mg/g powder, giving 0.848 ZnCl2 in 100 g slurry) was added to the finished slurry before spray drying.

L13 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1364352 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 148:32596
TITLE: Nutraceutical compositions from microalgae and related methods of production and administration
INVENTOR(S): Dillon, Harrison F.; Somanchi, Aravind; Rao, Kamalesh; Jones, Peter J. H.
PATENT ASSIGNEE(S): Solazyme, Inc., USA

SOURCE: PCT Int. Appl., 199pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007136428	A2	20071129	WO 2007-US1319	20070119
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
US 20070167396	A1	20070719	US 2006-336428	20060119
US 20070167397	A1	20070719	US 2006-336430	20060119
US 20070166449	A1	20070719	US 2006-336431	20060119
US 20070166797	A1	20070719	US 2006-336656	20060119
US 20070166266	A1	20070719	US 2006-337103	20060119
US 20070167398	A1	20070719	US 2006-337171	20060119
US 20070191303	A1	20070816	US 2006-336426	20060119
PRIORITY APPLN. INFO.:			US 2006-336426 A	20060119
			US 2006-336428 A	20060119
			US 2006-336430 A	20060119
			US 2006-336431 A	20060119
			US 2006-336656 A	20060119
			US 2006-337103 A	20060119
			US 2006-337171 A	20060119
			US 2006-816967P P	20060628
			US 2006-832091P P	20060720
			US 2006-838452P P	20060817
			US 2006-872072P P	20061130

AB Polysaccharides with nutraceutical application may by obtained by culturing red microalgae and the nutraceutical compns. thus produced may comprise a carrier and homogenized microalgal cells. Addnl. components may include phytosterols, limonoids, flavonoids, and tocotrienols. The polysaccharides may be used in applications such as reducing cholesterol in mammals, inactivating viruses, stabilizing foods, etc. Thus, total serum cholesterol in an animal model (hamsters) over 30 days was decreased 35-62% by dietary inclusion of Porphyridium biomass homogenate and polysaccharide, the highest decreases being observed when phytosterols were also present. Transgenic algae may be used that are capable of utilizing fixed carbon sources for energy. Also provided are novel nucleic acid sequences from red microalgae.

L13 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1073590 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 148:23891
TITLE: Lycopene and lutein inhibit proliferation in rat prostate carcinoma cells
AUTHOR(S): Gunasekera, Richard S.; Sewgobind, Kiran; Desai, Smruti; Dunn, Larry; Black, Homer S.; McKeehan, Wallace L.; Patil, Bhimanagouda
CORPORATE SOURCE: University of Houston-Victoria, Victoria, TX, 77901, USA
SOURCE: Nutrition and Cancer (2007), 58(2), 171-177
CODEN: NUCADQ; ISSN: 0163-5581
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Consumption of lycopene, a carotenoid without provitamin A activity, has been associated with a lower risk of prostate and breast cancer. Lutein is another carotenoid that may be associated with a reduced risk of age-related macular degeneration, the leading cause of blindness

in adults 65 years of age and older. Bioactive compds. such as lycopene and lutein, derived from natural plant sources, have been shown to act at low substrate levels through the action of intrinsic cytokines and growth factors and their receptors within tissues, particularly those of the fibroblast growth factor and transforming growth factor β families. The effects of grapefruit-derived and com. lycopene and lutein preps. on androgen independent cultured malignant type II tumor cells [Dunning R3327A13 or AT3 cells (androgen-responsive, slow-growing tumor cells with well developed epithelium and stroma)] were compared to their benign parent type I tumor epithelial cells (DTE). Results demonstrated that both lycopene, in an α-cyclodextrin water soluble carrier, and lutein inhibited malignant AT3 cells in a concentration and time-dependent manner. No such effect was observed when benign DTE cells were examined, demonstrating selective inhibition of extremely malignant AT3 prostate cancer cells relative to their benign parent. lutein demonstrated a similar but slightly diminished response as lycopene. When cells were treated with cocktails of lycopene and lutein, no synergistic or additive effect occurred. These studies are consistent with epidemiol. studies that show inverse relationships of these carotenoids with prostate cancer.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1030225 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 147:408997
TITLE: Phytoxanthin microcapsule and its preparation
INVENTOR(S): Zheng, Yajin; Lin, Jun
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 9pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101032683	A	20070912	CN 2006-10049837	20060310
PRIORITY APPLN. INFO.:			CN 2006-10049837	20060310

AB The title phytoxanthin microcapsule with size 3-300μm consists of core material containing phytoxanthin and microporous starch or crosslinking starch (weight ratio 1-3:1-5), and wall material containing cellulose (e.g., hydroxyethyl cellulose, etc.), sugar (e.g., sucrose), vegetable gelatin (e.g., arabic gum, etc.) or protein (e.g., soybean protein, etc.), dextrin (e.g., cyclodextrin, etc.), and antioxidant (e.g., TBHQ, etc.). The weight amount of each composition of the core material is 1-30%. The preparation comprises mixing phytoxanthin with starch at room temperature, adding water solution containing cellulose, vegetable glue or protein, sugar, etc., grinding to form colloid, spraying to dry.

L13 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:973062 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 148:260790
TITLE: Evaluation of certain food additives
CORPORATE SOURCE: Joint FAO/WHO Expert Committee, Switz.
SOURCE: World Health Organization Technical Report Series (2005), 928, i-viii,1-157
CODEN: WHOTAG; ISSN: 0512-3054
PUBLISHER: World Health Organization
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. This report represents the conclusions of a Joint FAO/WHO Expert Committee convened to evaluate the safety of various food additives, with a view to recommending acceptable daily intakes (ADIs) and to prepare specifications for the identity and purity of food additives. The first part of the report contains a general discussion of the principles governing the toxicol. evaluation of food additives (including flavoring agents) and contaminants, assessments of intake, and the establishment and revision of specifications for food additives. A summary follows of the Committee's evaluations of toxicol. and intake data on various specific food additives (benzoyl peroxide, α-

cyclodextrin, hexose oxidase from Chondrus crispus expressed in Hansenula polymorpha, lutein from Tagetes erecta L., peroxyacid antimicrobial solns. containing 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), steviol glycosides, D-tagatose, xylanases from Bacillus subtilis expressed in B. subtilis, zeaxanthin), flavoring agents, and a natural constituent (glycyrrhizinic acid). Annexed to the report are tables summarizing the Committee's recommendations for ADIs of the food additives, recommendations on the flavoring agents and natural constituent considered, changes in the status of specifications, and further information requested or desired.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:435276 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 146:400946
TITLE: Nanosized carotenoid cyclodextrin complexes as nutritional supplements
INVENTOR(S): Smidt, Carsten R.; Bartlett, Mark R.; Mastaloudis, Angela; Poole, Stephen J.
PATENT ASSIGNEE(S): Pharmanex, LLC, USA
SOURCE: PCT Int. Appl., 14pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007044659	A2	20070419	WO 2006-US39383	20061005
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 20070191307	A1	20070816	US 2006-538766	20061004
EP 1931361	A2	20080618	EP 2006-836231	20061005
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
KR 2008055920	A	20080619	KR 2008-708961	20080415
PRIORITY APPLN. INFO.:			US 2005-724051P P	20051005
			US 2006-538766 A	20061004
			WO 2006-US39383 W	20061005

AB Nanosized nutrient formulations for enhanced absorption of nutritional agents are prepared The methods include the complexation of cyclodextrin with carotenoids and incorporation of the complexes into the nutritional supplements without intermediate collection, isolation, and drying steps. A stable carotenoid containing nutritional supplement contains β-carotene, astaxanthin, lycopene, zeaxanthin, and γ -cyclodextrin, Vitamins A and E, and lutein, krill oil, and D-limonene can be added.

L13 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:566600 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 145:45220
TITLE: Product and method using a low caloric chocolate base for oral administration of nutraceuticals.
INVENTOR(S): McKee, Dwight; Karwic, Amanda
PATENT ASSIGNEE(S): Pro-Health, Inc., USA
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006063219	A2	20060615	WO 2005-US44596	20051209
WO 2006063219	A3	20061221		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 20060134294	A1	20060622	US 2005-298724	20051209
EP 1835818	A2	20070926	EP 2005-853499	20051209
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
PRIORITY APPLN. INFO.:			US 2004-634993P	P 20041209
			WO 2005-US44596	W 20051209

AB A delivery system for nutraceuticals uses a low caloric chocolate base for containing one or more nutraceuticals, either blended with the chocolate itself, or added as a liquid or cream filling. The chocolate has a relatively high level of oligomeric proanthocyanidins, and preferably further includes a phytosterol and DHA, as well as being sweetened with a sweetener blend containing tagatose and a secondary low caloric, high intensity sweetener, preferably Lo Han Guo extract Using the inventive system, delivery of nutraceuticals in unit dosage form is facilitated, as the selected dose is carried within individual chocolate product pieces that taste substantially the same as conventional chocolate, though with few calories from carbohydrates, or effects on insulin response encountered with typical chocolate formulations.

L13 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:566566 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 145:51044
TITLE: Topical skin patch comprising xanthophylls
INVENTOR(S): Leonard, Todd
PATENT ASSIGNEE(S): Nu-Tein Co., Inc., USA
SOURCE: PCT Int. Appl., 94 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006062740	A2	20060615	WO 2005-US42418	20051122
WO 2006062740	A3	20060810		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CA 2588905	A1	20060615	CA 2005-2588905	20051122
EP 1827400	A2	20070905	EP 2005-852052	20051122
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
JP 2008520735	T	20080619	JP 2007-543428	20051122

PRIORITY APPLN. INFO.: US 2004-629927P P 20041122
WO 2005-US42418 W 20051122

AB The present invention provides for an adhesive patch that includes a flexible backing having a front side and a back side and a formulation positioned on at least a portion of the front side of the backing, in at least a portion of the front side of the backing, or on and in at least a portion of the front side of the backing. The formulation includes xanthophylls, a solvent that dissolves the xanthophylls, and a pressure sensitive adhesive. The present invention also provides methods of using the adhesive patch (e.g., treating acne or a pimple in a mammal; exfoliating the skin surface of a mammal; and/or improving the appearance of skin surface in a mammal). The methods include applying the adhesive patch of the present invention to a topical (e.g., skin) surface of a patient. For example, a topical patch was formulated containing glycerin 46, karaya gum 27, Aloe vera 0.97, an acrylic emulsion adhesive 14, water 2, zeaxanthin 5, lutein 5, and Q-15 0.03%, resp.

L13 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:369549 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 144:431649
TITLE: Method for preparing lutein powder from lutein resin
INVENTOR(S): Wang, Dong; Zhang, Famao; Liu, Wenlai
PATENT ASSIGNEE(S): Qingdao Scitech Perfume Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1723799	A	20060125	CN 2005-10044094	20050721

PRIORITY APPLN. INFO.: CN 2005-10044094 20050721

AB The title method comprises: (1) adding an alkali solution of low alc. into lutein resin under heating and stirring for saponification in the presence of an antioxidant, (2) filtering to remove aqueous solution of fatty acid salt to obtain lutein crystal, (3) washing with deionized water, drying under vacuum, and mixing with dextrin at a weight ratio of 1: (1-3), and (4) producing into powder. The dextrin coating can isolate lutein with oxygen and light so as to improve its stability.

L13 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:735830 CAPLUS <<LOGINID::20080708>>
TITLE: Flavored food-grade microemulsions
AUTHOR(S): Naouli, Nabil; Rosano, Henri L.
CORPORATE SOURCE: Chemistry, City College and the Graduate Center of the City University of New York, New York, NY, 10031, USA
SOURCE: Abstracts of Papers, 230th ACS National Meeting, Washington, DC, United States, Aug. 28-Sept. 1, 2005 (2005), AGFD-172. American Chemical Society: Washington, D. C.
CODEN: 69HFCL
DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)
LANGUAGE: English

AB Flavor encapsulation poses unique challenges within the field of microencapsulation. Flavor is a complex mixture of individual chems., including the critical volatile or -aromatic' compds. that define a given flavor. These chems. also determine the flavor's organoleptic and phys. properties and this severely constrains preparation protocols. Of established encapsulation methods--spray drying, melt injection, beta-cyclodextrin complexation, and microemulsification--the last has been little used in food systems, as ingredients known to form microemulsions of the desired degree of dilution are usually either not GRAS(Generally Recognized As Safe) or bitter to the taste. Utilizing new formulation technol., we succeeded in forming concentrated O/W microemulsions of orange or lemon oil made with GRAS emulsifiers that may be delivered by aqueous phases. Our method of preparation involved determination of (1) the precise HLB of the flavored oil at the water/oil interface, using the titration method; (2) the optimum length of the hydrophobic chain of the emulsifier that will allow the bending of the interface; and (3) the optimum amount of emulsifier

for a given volume of the dispersed phase that will impede the formation of gel or macrocrystal structures (lamellae or rods). These transparent systems, characterized by dispersed-phase droplets measuring 10-40 nm in diameter and high solubilization capacities, make excellent hosts for guest mols., including nutraceuticals. Their capacity to deliver such non-soluble nutraceuticals as lutein, phytosterols, and Vitamins E, D, and K is particularly promising.

L13 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:119962 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 142:197042
TITLE: Compositions for improvement of bioavailability of effective ingredients in general food, health food, or dietary supplements
INVENTOR(S): Kawade, Yuji; Osakabe, Naomi; Murashima, Koichiro; Baba, Seigo; Kawabata, Keiko
PATENT ASSIGNEE(S): Meiji Seika Kaisha, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2005034135	A	20050210	JP 2004-52598		20040227
PRIORITY APPLN. INFO.:			JP 2003-187715	A	20030630

AB The comps. contain ingredients which are effective for conditioning of the intestinal environment and/or the antioxidant activity. The ingredients effective for conditioning of the intestinal environment may contain probiotics, prebiotics, and/or biogenics such as lactic acid bacteria, oligosaccharides, dietary fiber, or bifidus factor, and the ingredients effective for conditioning of the antioxidant activity may be vitamins, carotenoids, and minerals. The bioavailability of effective ingredients in general food, health food, or dietary supplements is improved by intake of the intestinal environment- and/or antioxidant activity-conditioning ingredients.

L13 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:1081766 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 142:150970
TITLE: Xanthophylls and α-tocopherol decrease UVB-induced lipid peroxidation and stress signaling in human lens epithelial cells
AUTHOR(S): Chitchumroonchokchai, Chureeporn; Bomser, Joshua A.; Glamm, Jayme E.; Failla, Mark L.
CORPORATE SOURCE: Ohio State University Interdisciplinary PhD Program in Nutrition, Ohio State University, Columbus, OH, 43210, USA
SOURCE: Journal of Nutrition (2004), 134(12), 3225-3232
CODEN: JONUAI; ISSN: 0022-3166
PUBLISHER: American Society for Nutritional Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Epidemiol. studies suggest that consumption of vegetables rich in the xanthophylls lutein (LUT) and zeaxanthin (ZEA) reduces the risk for developing age-related cataract, a leading cause of vision loss. Although LUT and ZEA are the only dietary carotenoids present in the lens, direct evidence for their photoprotective effect in this organ is not available. The present study examined the effects of xanthophylls and α-tocopherol (α-TC) on lipid peroxidn. and the mitogen-activated stress signaling pathways in human lens epithelial (HLE) cells following UV B light (UVB) irradiation When presented with LUT, ZEA, astaxanthin (AST), and α-TC as methyl-β-cyclodextrin complexes, HLE cells accumulated the lipophiles in a concentration- and time-dependent manner with uptake of LUT exceeding that of ZEA and AST. Pretreatment of cultures with either 2 μmol/L xanthophyll or 10 μmol/L α-TC for 4 h before exposure to 300 J/m2 UVB radiation decreased lipid peroxidn. by 47-57% compared with UVB-treated control HLE cells. Pretreatment with the xanthophylls and α-TC also inhibited UVB-induced activation

of c-JUN NH2-terminal kinase (JNK) and p38 by 50-60 and 25-32%, resp. There was substantial inhibition of UVB-induced JNK and p38 activation for cells containing <0.20 and >approx.0.30 nmol xanthophylls/mg, resp., whereas >2.3 nmol α-TC/mg protein was required to significantly decrease UVB-induced stress signaling. These data suggest that xanthophylls are more potent than α-TC for protecting human lens epithelial cells against UVB insult.
REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:473124 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 141:42908
TITLE: Coated carotenoid cyclodextrin complexes
INVENTOR(S): Reuscher, Helmut; Kagan, Daniel I.; Madhavi, Doddabele L.
PATENT ASSIGNEE(S): Bioactives LLC, USA; Wacker Biochem Corp.
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040109920	A1	20040610	US 2002-309999	20021204
PRIORITY APPLN. INFO.:			US 2002-309999	20021204

AB Coated cyclodextrin and carotenoid complexes are stable against oxidation and exhibit higher biouptake than oil-based, lipophile based, and micellar carotenoid compns. The coating may be an oil, or a naturally occurring, optionally derivatized polymer or a pharmaceutically acceptable synthetic polymer. A lutein-γ - cyclodextrin complex was prepared and coated with soy oil.

L13 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:220032 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 140:259103
TITLE: Multi-use vessels and plastic blow fill containers for active vitamin D formulations
INVENTOR(S): Mazess, Richard B.; Driscoll, Jeffrey W.; Goldensoph, Creighton Reed; Levan, Leon W.
PATENT ASSIGNEE(S): Bone Care International, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040058895	A1	20040318	US 2002-247766	20020918
US 20040058895	A1	20040325	US 2003-608480	20030627
WO 2004026218	A2	20040401	WO 2003-US28498	20030910
WO 2004026218	A3	20040715		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003266138	A1	20040408	AU 2003-266138	20030910
PRIORITY APPLN. INFO.:			US 2002-247766	A2 20020918
			WO 2003-US28498	W 20030910

AB This invention relates to multi-use dispensing vessels containing pharmaceutical formulations of active vitamin D compds., and also to plastic fill containers containing active vitamin D formulations. The vitamin

D formulation comprises an active vitamin D compound or analog; a non-ionic solubilizer; a lipophilic antioxidant, and optionally, an agent(s) that is an organic solvent, a preservative or both, in an aqueous vehicle. The formulation comprises a vitamin D compound or analog, a non-ionic solubilizer, a small amount of lipophilic antioxidant, and optionally, an agent that includes an organic solvent (e.g., ethanol) or co-solvents (e.g., propylene glycol and ethanol) and/or a preservative (e.g., benzyl alc.). The formulations may be formulated in a variety of concns. in various vial sizes for various administration dosages.

L13 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:220031 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 140:259102
TITLE: Formulation for lipophilic agents
INVENTOR(S): Mazess, Richard B.; Driscoll, Jeffrey W.; Goldensoph, Creighton Reed; Levan, Leon W.
PATENT ASSIGNEE(S): Bone Care International, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040053894	A1	20040318	US 2002-247765	20020918
US 7148211	B2	20061212		
CA 2498331	A1	20040401	CA 2003-2498331	20030910
WO 2004026231	A2	20040401	WO 2003-US28499	20030910
WO 2004026231	A3	20040812		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003267131	A1	20040408	AU 2003-267131	20030910
BR 2003014354	A	20050719	BR 2003-14354	20030910
EP 1553956	A2	20050720	EP 2003-749606	20030910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1684691	A	20051019	CN 2003-822203	20030910
JP 2006502185	T	20060119	JP 2004-537767	20030910
MX 2005PA02814	A	20050527	MX 2005-PA2814	20050314
IN 2005DN00997	A	20080208	IN 2005-DN997	20050315
US 20060183722	A1	20060817	US 2006-379423	20060420
PRIORITY APPLN. INFO.:			US 2002-247765 A	20020918
			WO 2003-US28499 W	20030910

AB The invention relates to pharmaceutical formulations of lipophilic therapeutic agents in which such agents are solubilized in largely aqueous vehicles, and processes for preparing and using the same. A formulation was prepared from a vitamin D compound, 1α-(OH)D2, benzyl alc. 2.5, and Tween-20 0.5-2.5% and BHT 20 ppm. The results of the phase one study indicate that patients treated with the MTD of 1α-(OH)D2 for at least six months report that bone pain associated with metastatic disease is significantly diminished. The results of the phase two study indicate that after 2 yr, CAT scans, x-rays and bone scans used for evaluating the progression of metastatic disease show stable disease or partial remission in many patients treated at the lower dosage, and stable disease and partial or complete remission in many patients treated at the higher dosage. The present invention provides an improved formulation for lipophilic drug agents that are only slightly soluble in an aqueous vehicle.
REFERENCE COUNT: 225 THERE ARE 225 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:41525 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 140:110455
TITLE: Complexes of cyclodextrins and carotenoids for use in feed
INVENTOR(S): Mortensen, Bjarte; Jansson, Stig Tore Kragh
PATENT ASSIGNEE(S): Poltec As, Norway
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004005353	A1	20040115	WO 2003-NO236	20030704
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003258890	A1	20040123	AU 2003-258890	20030704
PRIORITY APPLN. INFO.:			DK 2002-1049 A	20020704
			WO 2003-NO236 W	20030704

AB A complex between a carotenoid (e.g., astaxanthin) and cyclodextrin is used in feed to enhance the pigmentation in tissues of animals (especially fish with colored flesh). Thus, salmon (Salmo salar) pigmentation and astaxanthin content is improved by incorporation of astaxanthin-cyclodextrin complex in feed. The storage stability and color retention of the complexed carotenoid is greatly improved compared to uncomplexed carotenoid.
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:855813 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 139:341715
TITLE: Use of compositions containing petasin -containing, petasin-depleted or petasin-free petasite extracts as specific COX-2 inhibitors
INVENTOR(S): Rittinghausen, Reiner
PATENT ASSIGNEE(S): Weber & Weber G.m.b.H. & Co. KG, Germany
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003088985	A2	20031030	WO 2003-EP3756	20030411
WO 2003088985	A3	20040226		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10217939	A1	20031113	DE 2002-10217939	20020422
AU 2003233964	A1	20031103	AU 2003-233964	20030411
EP 1499334	A2	20050126	EP 2003-727288	20030411
EP 1499334	B1	20070822		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
EP 1803462 A2 20070704 EP 2007-101923 20030411
EP 1803462 A3 20071003
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR
AT 370742 T 20070915 AT 2003-727288 20030411
PRIORITY APPLN. INFO.: DE 2002-10217939 A 20020422
EP 2003-727288 A3 20030411
WO 2003-EP3756 W 20030411

AB The invention relates to the use of petasin -containing, petasin -depleted or petasin -free petasite exts., and/or at least one petasin -containing, petasin -depleted or petasin -free petasite extract fraction, for producing a pharmaceutically active composition for the treatment and/or prophylaxis of diseases, including joint disease and connective tissue disease, arthritis, arthrosis, osteoarthritis, rheumatoid arthritis, chronic polyarthritis, polyps, adenomas, gastro-intestinal diseases, gastro-intestinal ulcerations, gastroduodenitis, and all types of gastritis, spasms of the gastro-intestinal tract, dyskinesia of the bile passages, colitis, Crohn's disease, thromboembolic diseases, coronary diseases, vascular diseases, peripheral occlusive arterial diseases, inflammation in the coronary vessels, myocarditis, myocardial infarction, unstable and stable angina pectoris, transitory ischemic attacks, apoplexy, reversible ischemic neurol. deficit, prolonged ischemic neurol. deficit, spinal column syndrome, dorsalgia, invertebral disk disease, hypertension, headaches, migraines, asthma, hay fever, allergic rhinitis, obstructive respiratory tract diseases, skin diseases, Alzheimer's disease, tuberculosis, eczema, psoriasis, dysmenorrhea, bladder diseases, incontinency, painful spasms in the urogenital region, dysuria, tumors, tumoral pain, neuro vegetative disorders, agitative states, anxiety states, sleeping disorders, depression and/or pain. Thus a composition contained (mg): polar petasin -free petasite extract 25.0; medium chain triglycerides 245.0; glycerol (85%) 23.52-27.60; dry matter from 70% sorbitol solution 17.12-20.10; gelatine 80.89-94.96; red iron oxide 0.47-0.55; glycerol 1.60-1.88; black iron oxide 1.13-1.33. Pyrrolizidine alkaloid-free extract was prepared by acid extraction of a preconcd. extract obtained according to a previously described method.

L13 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:584831 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 139:270975
TITLE: Direct superoxide anion scavenging by a disodium disuccinate astaxanthin derivative: relative efficacy of individual stereoisomers versus the statistical mixture of stereoisomers by electron paramagnetic resonance imaging
AUTHOR(S): Cardounel, Arturo J.; Dumitrescu, Christian; Zweier, Jay L.; Lockwood, Samuel F.
CORPORATE SOURCE: Davis Heart and Lung Research Institute, Columbus, OH, 43210-1252, USA
SOURCE: Biochemical and Biophysical Research Communications (2003), 307(3), 704-712
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Carotenoids are a related group of greater than 600 natural compds., irresp. of geometric- and stereoisomers, with demonstrated antioxidant efficacy. The carotenoids are broadly divided into "carotenes," or non-oxygen substituted hydrocarbon carotenoids, and "xanthophylls," oxygen-substituted carotenoids. The natural compds. are excellent singlet oxygen quenchers as well as lipid peroxidn. chain-breakers; this dual antioxidant capacity is generally attributed to the activity of the polyene chain, and increases with the number of conjugated double bonds along the polyene chain length. However, the poor aqueous solubility of most carotenes and the vast majority of xanthophylls limits their use as aqueous-phase singlet oxygen quenchers and direct radical scavengers. A variety of introduction vehicles (e.g., organic solvents, cyclodextrins) have been used to introduce the insol. carotenoids into aqueous test systems. Hawaii Biotech, Inc. (HBI) successfully synthesized a novel carotenoid derivative, the disodium disuccinate derivative of astaxanthin (3,3'-dihydroxy-β,β-carotene-4,4'-dione) in

all-trans (all-E) form. The novel derivative is a water-dispersible sym. chiral mol. with two chiral centers, yielding four stereoisomeric forms: 3R,3'R and 3S,3'S (enantiomers), and the diastereomeric meso forms (3R,3'S and 3'R,3S). The individual stereoisomers were synthesized at high purity (>90% by HPLC) and compared directly for efficacy with the statistical mixture of stereoisomers obtained from the synthesis from the com. source of astaxanthin (1:2:1 ratio of 3S,3'S, meso, and 3R,3'R, resp.). Direct scavenging of superoxide anion was evaluated in a standard in vitro isolated human neutrophil assay by ESR (EPR) imaging, employing the spin-trap DEPMPO. Each novel derivative was tested in pure aqueous formulation and in ethanolic formulation shown to completely disaggregate the compds. in solution In each case, the ethanolic formulation was a more potent scavenging vehicle. No significant differences in scavenging efficiency were noted among the individual stereoisomers and the statistical mixture of stereoisomers, suggesting that the polyene chain alone was responsible for superoxide scavenging. Dose-ranging revealed that the statistical mixture of stereoisomers of the novel derivative, at millimolar (mM) concns., could nearly completely eliminate the superoxide anion signal generated in the activated human neutrophil assay. All ethanolic formulations of the novel derivs. exhibited increased scavenging efficiency over equimolar concns. of non-esterified astaxanthin delivered in a DMSO vehicle. These novel compds. will likely find utility in applications requiring aqueous delivery of a highly potent direct radical scavenger.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:610975 CAPLUS <<LOGINID::20080708>>

DOCUMENT NUMBER: 136:390842

TITLE: Carotenoid incorporation into natural membranes from artificial carriers: liposomes and β-cyclodextrins

AUTHOR(S): Lancrajan, I.; Diehl, H. A.; Socaciu, C.; Engelke, M.; Zorn-Kruppa, M.

CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of Agricultural Sciences and Veterinary Medicine, Napoca, Cluj, Rom.

SOURCE: Chemistry and Physics of Lipids (2001), 112(1), 1-10 CODEN: CPLIA4; ISSN: 0009-3084

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Liposomes and β- cyclodextrin (β- CD) have been used as carriers for the incorporation of three dietary carotenoids (β-carotene (BC), lutein (LUT) and canthaxanthin (CTX)) into plasma, mitochondrial, microsomal and nuclear membrane fractions from pig liver cells or the retinal epithelial cell line D407. The uptake dynamics of the carotenoids from the carriers to the organelle membranes and their incorporation yield (IY) was followed by incubations at pH 7.4 for up to 3 h. The mean IYs saturated between 0.1 and 0.9 after 10-30 min of incubation, depending on membrane characteristics (cholesterol to phospholipid ratio) and carotenoid specificity. Mitochondrial membranes (more fluid) favor the incorporation of BC (non-polar), while plasma membranes (more rigid) facilitate the incorporation of lutein, the most polar carotenoid. A high susceptibility of BC to degradation in the microsomal suspension was observed by parallel incubations with/without 2,6-di-t-butyl-p-cresol (BHT) as antioxidant additive. The β- CD carrier showed to be more effective for the incorporation of lutein while BC was incorporated equally into natural membranes either from liposomes or from cyclodextrins. The presence of cytosol in the incubation mixture had no significant effects on the carotenoid incorporations.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:200845 CAPLUS <<LOGINID::20080708>>

DOCUMENT NUMBER: 133:101647

TITLE: Carotenoid:methyl-β- cyclodextrin formulations: an improved method for supplementation of cultured cells

AUTHOR(S): Pfitzner, I.; Francz, P. I.; Biesalski, H. K.

CORPORATE SOURCE: Department of Biological Chemistry and Nutrition, University of Hohenheim, Hohenheim, D-70593, Germany
SOURCE: Biochimica et Biophysica Acta, General Subjects (2000), 1474(2), 163-168
CODEN: BBGSB3; ISSN: 0304-4165
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A physiol., water-soluble complex of carotenoids with methyl-β-cyclodextrin (M.beta.CD) was developed for the purpose of cell supplementation. Bioavailability, cytotoxicity and stability of the formulations were compared to carotenoid solns. in organic solvents (THF/DMSO (1:1), THF and ethanol). The stability of the different carotenoid solns. (0.5 μM) under cell culture conditions was determined by measuring absorbance 1 and 7 days after treatment. To determine the availability of β-carotene (BC), human skin fibroblasts were incubated for up to 8 days with 5 uM BC in M.beta.CD or THF/DMSO and the cellular and medium BC contents were determined by HPLC anal. Depending on the solubilizer, different orders of stability were found. M.beta.CD formulation: BC > zeaxanthin > lutein > lycopene. Organic solvents: zeaxanthin > lutein > lycopene > BC. Two days after supplementation with 5 μM BC in M.beta .CD, cellular BC levels reached a maximum of 140±11 pmol/μg DNA, leveling off to 100±15 pmol/μg DNA until day 8. Incubation with BC dissolved in THF/DMSO resulted in a lower BC uptake of 105±14 pmol/μg DNA and 64±20 pmol/μg DNA resp. No cytotoxic effects of these formulations were detected. The results show that the M.beta.CD formulation is an improved method for investigations of carotenoids and other lipophilic compds. in in vitro test systems compared to methods using organic solvents.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:874218 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 123:296647
ORIGINAL REFERENCE NO.: 123:52925a,52928a
TITLE: Study of bioavailability and pharmacodynamics of various forms of β-carotene in volunteers
AUTHOR(S): Yakushina, L. M.; Malakhova, E. A.; Shkarina, T. N.; Poznanskaya, A. A.; Spirichev, V. B.
CORPORATE SOURCE: Inst. Nutrition, Russian Academy Medical Sci., Moscow, Russia
SOURCE: Voprosy Meditsinskoi Khimii (1995), 41(4), 36-41
CODEN: VMDKAM; ISSN: 0042-8809
PUBLISHER: Meditsina
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The bioavailability of β-carotene from a water-soluble formulation based on cyclodextrin (Cyclocar tablets) vs. oily formulation was studied in volunteers given a single dose of 25 mg. The concns. of β-carotene and major carotenoids were measured in the blood serum during the experiment by HPLC. The maximum content of β-carotene in the serum was attained 24-30 and 30-48 h after oily formulations and Cyclocar and were 48.0 ± 7.7 and 28.1 ± 3.6 mg/dL, resp. The rate of β-carotene utilization from Cyclocar was 2.2 times less than that from the oil paste. Besides, β-carotene absorbed from these oily drugs retained in the blood serum for longer period than that from Cyclocar.

L13 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:229393 CAPLUS <<LOGINID::20080708>>
DOCUMENT NUMBER: 118:229393
ORIGINAL REFERENCE NO.: 118:39563a,39566a
TITLE: Analysis of carotenoids by high-performance liquid chromatography and supercritical fluid chromatography
AUTHOR(S): Lesellier, E.; Tchapla, A.; Marty, C.; Lebert, A.
CORPORATE SOURCE: Letiam, IUT Orsay, Plateau du Moulon, B.P. 127, Orsay, 91403, Fr.
SOURCE: Journal of Chromatography (1993), 633(1-2), 9-23
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 98 refs. The 1st part describes the chemical structures and importance of carotenoids for health. Sample preparation for extracting carotenoids from fruits and vegetable matrixes is detailed in terms of pre-extraction treatment (enzyme inactivation, addition of antioxidants and acid neutralizers), extraction conditions with solvents or supercrit. fluids and saponification. In the 2nd part, HPLC and SFC separation methods are described. The efficiencies of different inorg. packings (silica, magnesium oxide, calcium hydroxide, alumina), bonded silica packings (cyano, octadecyl), and chiral phases (cellulose, cyclodextrins) are discussed. The choice of an appropriate method depending on the type of pigment to be separated (xanthophylls, carotenes, cis-trans isomers) is discussed. The effects of the mobile phase (specific interactions, H bonding) and of the stationary phase (nature and type of linkage: monofunctional or polyfunctional, end-capping of residual silanols) on the solute retention are reported and explained on the basis of the differences between the chemical structures of the pigments.

L13 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:213251 CAPLUS <<LOGINID::20080708>>

DOCUMENT NUMBER: 112:213251

ORIGINAL REFERENCE NO.: 112:35933a,35936a

TITLE: Separation of carotenes on cyclodextrin -bonded phases

AUTHOR(S): Stalcup, Apryll M.; Jin, Heng L.; Armstrong, Daniel W.; Mazur, Paul; Derguini, Fadila; Nakanishi, Koji

CORPORATE SOURCE: Dep. Chem., Univ. Missouri, Rolla, MO, 65401, USA

SOURCE: Journal of Chromatography (1990), 499, 627-35
CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The separation of carotenoids and retinoids on a β- cyclodextrin -bonded stationary phase with conventional mobile phases is reported. Compds. studied include β-carotene (all-trans), 15,15'-cis-β-carotene, 7,8,7',8'-dihydro-β-carotene, α-carotene, lycopene, lutein, zeaxanthin, retinal, retinol, retinol palmitate, and retinol acetate. The best resolution of carotenes was obtained with low concns. (≤1%) of polar solvents (e.g., 2-propanol or Et acetate) in hexane or cyclohexane. Xanthophylls required much higher concns. of polar solvents. The best solvent for the resolution of lutein and zeaxanthin was found to be dichloromethane. The resolution of cis/trans-isomers and the tentative identification of other isomers present in newly synthesized carotenoid stds. is also reported. All trans-isomers were found to be eluted before cis-isomers.